CLAIMS

What is claimed is:

1. A method of generating link quality control information, the method comprising:

receiving a received signal from a front end receiver;

estimating time dispersion information during a synchronization of the received signal; and

generating link quality control information using the time dispersion information, wherein the link quality control information includes information pertaining to an optimal transmission parameter.

2. The method of claim 1 further comprising:

transmitting the link quality control information to a unit that transmitted the received signal.

3. The method of claim 1, wherein estimating time dispersion information comprises:

assuming a time dispersion of a predetermined amount, thereby establishing a time dispersion window; and

determining a synchronization position by maximizing the energy of the received signal within the time dispersion window.

4. The method of claim 3 further comprising:

using a cross-correlation between the received signal and a known training sequence to determine the maximum energy of the received signal within the time dispersion window.

5. The method of claim 1, wherein estimating time dispersion information comprises:

assuming a time dispersion equal to a maximum time dispersion allowed for a given system, thereby establishing a time dispersion window; and

estimating a true time dispersion by a statistical method.

6. The method of claim 5, wherein the statistical method is an Akaike Information Criteria test.

7. The method of claim 1 further comprising:

mapping a coding rate proposal to the time dispersion information using a lookup table containing a priori information about optimal coding rate as a function of the time dispersion, wherein the coding rate proposal is the optimal transmission parameter.

8. The method of claim 1, wherein the optimal transmission parameter is a modulation format proposal.

9. The method of claim 8, wherein the modulation format proposal is a change between Gaussian Minimum Shift Keying and 8-Phase Shift Keying.

10. The method of claim 1, wherein the optimal transmission parameter includes at least one of a coding rate, a modulation format and a transmitting unit power output proposal.

11. A transceiver comprising:

a front end receiver that outputs a received signal;

logic that estimates time dispersion information during a synchronization of the received signal; and

logic that generates link quality control information using the time dispersion information, wherein the link quality control information includes information pertaining to an optimal transmission parameter.

12. The transceiver of claim 11 further comprising:

a transmitter that transmits the link quality control information to a unit that transmitted the received signal.

13. The transceiver of claim 11, wherein the logic that estimates the time dispersion information comprises:

logic that assumes a time dispersion of a predetermined amount, thereby establishing a time dispersion window; and

logic that determines a synchronization position by maximizing the energy of the received signal within the time dispersion window.

14. The transceiver of claim 13 further comprising:

logic that uses a cross-correlation between the received signal and a known training sequence to determine the maximum energy of the received signal within the time dispersion window.

15. The transceiver of claim 11, wherein the logic that estimates the time dispersion information comprises:

logic that assumes a time dispersion equal to a maximum time dispersion allowed for a given system, thereby establishing a time dispersion window; and

logic that estimates a true time dispersion by a statistical method.

16. The transceiver of claim 15, wherein the statistical method is an Akaike Information Criteria test.

17. The transceiver of claim 11 further comprising:

logic that maps a coding rate proposal to the time dispersion information using a lookup table containing a priori information about optimal coding rate as a function of the time dispersion, wherein the coding rate proposal is the optimal transmission parameter.

18. The transceiver of claim 11, wherein the transceiver is a base station.

19. The transceiver of claim 11, wherein the transceiver is a mobile terminal.

20. The transceiver of claim 11, wherein the optimal transmission parameter is a modulation format proposal.

21. The transceiver of claim 20, wherein the modulation format proposal is a change between Gaussian Minimum Shift Keying and 8-Phase Shift Keying.

22. The transceiver of claim 11, wherein the optimal transmission parameter includes at least one of a coding rate, a modulation format and a transmitting unit power output proposal.